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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/676,696

09/29/2000

David L. Rechberger

39808/SAH/C715

1549

3017

7590

02/01/2005

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/676,696

Applicant(s)

RECHBERGER ET AL.

Examiner

Arnel C. Lavarias

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The cancellation of Claims 2-37, 39-41, 44-59 in the submission dated 11/12/04 is acknowledged and accepted.

Response to Arguments

2. The Applicants' arguments filed 11/12/04 have been fully considered but they are not persuasive. The Applicants argue that, with respect to Claim 60, the combined teachings of Paniccia et al. and Honmou fail to disclose or reasonably suggest the optoelectronic device and a planar mirror being embedded within a body portion of an optically transparent fiber coupling assembly. The Examiner respectfully disagrees. After reviewing Figure 8a of Applicants' disclosure, to which Claim 60 is drawn to, and reviewing Paniccia et al. and Honmou, it is noted that Paniccia et al. discloses a transparent assembly (See for example 123 in Figure 1B) in the form of a transparent thermally conducting or heat sinking material, such as diamond or silicon carbide (See col. 5, lines 7-18 of Paniccia et al.), that embeds at least one planar mirror (See for example 133, 135, 137, 139, 141, 143 in Figure 1A of Paniccia et al.). Applicants argue that heat sink 123 is not the assembly responsible for receiving, transmitting, and redirecting the light beam within the assembly, however, it is noted that heat sinking material 123 encompasses assembly 125 such that 125 is embedded within heat sinking material 123, and heat sinking material has been disclosed as being able to optically

couple the light traversing within the heat sinking material to the active optoelectronic devices (See col. 5, lines 7-18 of Paniccia et al.). With respect to the active optoelectronic device, Paniccia et al. does disclose that such active devices (See 115, 117, 119, 121 in Figure 1A of Paniccia et al.) may be made using, for example, electro-optic crystals, semiconductor-based optical modulating techniques, and even diffusion photodiodes (See col. 4, lines 35-64 of Paniccia et al.), any one of which are included within the heat sink, and not on the adjacent die, thus providing the added advantage of being able to utilize passive alignment techniques to align the heat sink, which include the embedded components, with respect to the die prior to coupling the structures together.

3. Finally, Applicants argue that, with respect to Claim 60, Honmou does not specifically disclose a fiber coupling assembly having a barrel portion being configured to operably engage a fiber optic cable. The Examiner respectfully disagrees. It is noted that the features upon which applicant relies (i.e., the barrel portion of the fiber coupling assembly operably engaging an optical fiber cable such that the engagement is not permanent) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant case, Honmou specifically discloses that the barrel portion of the fiber coupling assembly (See 5, 6, 7 in Figure 1) does operably engage an optical fiber, since a fiber is required to be placed onto the V-groove, and a high transmission resin is used to seal the fiber and the active optoelectronic device to prevent movement. The limitations of Claim 60 do

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not specifically recite that the optical fiber be disengagable from the barrel portion of the fiber coupling assembly.

4. Claim 60 is rejected as follows.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paniccia et al. (U.S. Patent No. 6393169), of record, in view of Honmou (U.S. Patent No. 6019523), of record.

Paniccia et al. discloses an optical device package (See for example Figures 1A-B, 3C, 5, 9) comprising a substrate (See for example 153 or 103 in Figure 1A) having a mounting surface (See for example upper surface of either 153 or 103 in Figure 1A); an optoelectronic device (See for example 115, 117, 119, 121 in Figure 1A) having a lower mounting surface operably coupled to the mounting surface of the substrate wherein the optoelectronic device is in electrical communication with the substrate (See for example 149, 111, 107, 151, 113, 109 in Figure 1A); the optoelectronic device further having an active upper surface disposed substantially parallel to the mounting surface of the substrate (See for example upper surface of 115, 117, 119, 121 in Figure 1A) and being configured to emit or receive light normal to the active upper surface (See Figure 1A); an

optically transparent fiber coupling assembly (See for example 123 in Figure 1A; 209A-B, 301 in Figure 3C; col. 4, line 29-col. 5, line 18; col. 8, lines 1-17) having a body portion that is integrally molded with the optoelectronic device such that the optoelectronic device is embedded within the fiber coupling assembly, the body portion being configured and arranged to transmit light; and the fiber coupling assembly further having a planar mirror within the body portion of the fiber coupling assembly to reflect light traveling within the body portion (See for example 133, 135, 137, 139, 141, 143 in Figure 1A). Paniccia et al. lacks the fiber coupling assembly further having a barrel portion extending from the body portion in a direction substantially parallel to the substrate, the barrel portion being configured to operably engage a fiber optic; and an enclosure coupled to the substrate that houses the optoelectronic device. However, Honmou teaches an optical semiconductor module (See Figure 1), wherein a transparent medium (See 7 in Figure 1) is used to embed the semiconductor device and optical reflector (i.e. for example the detector/laser diode 3 and planar routing mirror 11 in Figure 1). In addition, Honmou teaches that the transparent medium may include a barrel portion to engage with an optical fiber (See for example 5, 6, 7 in Figure 1; col. 2, lines 41-64). It is further noted that the use of an enclosure to house optoelectronic devices is well known in the art. For example, Honmou teaches that an additional housing is disposed around the optically transparent material to house the optoelectronic devices (See 8 in Figure 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the fiber coupling assembly further have a barrel portion extending from the body portion in a direction substantially parallel

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to the substrate, the barrel portion being configured to operably engage a fiber optic; and an enclosure be coupled to the substrate that houses the optoelectronic device, as taught by Honmou, in the optical device package of Paniccia et al. One would have been motivated to have the fiber coupling assembly further have a barrel portion extending from the body portion in a direction substantially parallel to the substrate, the barrel portion being configured to operably engage a fiber optic, for the purpose of reducing alignment errors between the optical fiber and the semiconductor device, thus increasing light coupling. One would have been motivated to have an enclosure be coupled to the substrate that houses the optoelectronic device to provide additional protection and mechanical integrity for the optoelectronic devices housed within the enclosure, as well as to prevent stray light from entering the enclosure.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the


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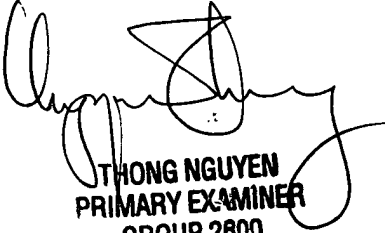
advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Arnel C. Lavarias
1/24/05


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